

National and State Resource Concerns and Quality Criteria					
Soil					
National Natural Resource Concern	Description of Concern	Quality Criteria	State Quality Criteria	Measurement Units	Assessment Tools for Quality Criteria Evaluation
Soil Erosion - Sheet and Rill	Detachment and transport of soil particles caused by rainfall splash and runoff degrade soil quality.	Sheet and rill erosion does not exceed the Soil Loss Tolerance "T".	SAME AS NATIONAL	Tons/Acre/Year – average annual tons of erosion reduced per acre for the field or planning area/unit	<ul style="list-style-type: none"> Visual assessment (pedestals, rills) RUSLE2
Soil Erosion - Ephemeral Gully	Small channels caused by surface water runoff degrade soil quality and tend to increase in size. On cropland, they can be obscured by heavy tillage.	Surface water runoff is controlled sufficiently to stabilize the small channels and prevent reoccurrence of new channels.	SAME AS NATIONAL	Tons/Year – average annual tons of erosion reduced for the field or planning area/unit	<ul style="list-style-type: none"> Visual assessment Volume calculation
Soil Erosion - Classic Gully	Deep, permanent channels caused by the convergence of surface runoff degrade soil quality. They enlarge progressively by headcutting and lateral widening.	Surface water runoff is controlled sufficiently to stop progression of headcutting and widening.	SAME AS NATIONAL	Tons/Year – average annual tons of erosion reduced for the field or planning area/unit	<ul style="list-style-type: none"> Visual assessment Volume calculation Aerial photo trend analysis
Soil Erosion - Streambank	Accelerated loss of streambank soils restricts land and water use and management.	Accelerated streambank soil loss does not exceed a level commensurate with upstream land use and normal geomorphological processes on site.	Accelerated stream bank soil loss does not exceed a level commensurate with upstream land use and normal geomorphologic processes on site. <i>The stream bank is stabilized (80% or more is vegetated or mechanically treated).</i>	Tons/Year – average annual tons of erosion reduced for the field or planning area/unit	<ul style="list-style-type: none"> Visual assessment, Aerial photo trend analysis SVAP (Stream Visual Assessment Protocol – USDA/NRCS) Engineering Field Handbook, Chapter 16

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Soil Erosion - Mass Movement	Soil slippage, landslides, or slope failure, normally on hillsides, result in large volumes of soil movement	Shallow slumps, slides, or slips are prevented or minimized so that the mass movement of soil material does not exceed naturally occurring rates.	Shallow slumps, slides, or slips are prevented or minimized so that the mass movement of soil material does not exceed naturally occurring rates. <i>Sites are stabilized and revegetated. Livestock and equipment is excluded until permanent vegetation is established for 1 year.</i>	Tons/Year – average annual tons of erosion reduced for the field or planning area/unit	<ul style="list-style-type: none"> Visual assessment Aerial photo trend analysis Volume calculation
Soil Erosion – Road, Road Sides and Construction Sites	Soil loss occurs on areas left unprotected during or after road building and/or construction activities.	Sites are adequately protected from soil loss during and after road building and construction activities.	Sites are adequately protected from soil loss during and after road building and construction activities. <i>Off-site effects of erosion or sedimentation is eliminated.</i>	Tons/Year – average annual tons of erosion reduced for the field or planning area/unit	<ul style="list-style-type: none"> Visual assessment Volume Calculation Water erosion prediction tools (RUSLE2)
Soil Condition - Organic Matter Depletion	Soil organic matter has or will diminish to a level that degrades soil quality.	Soil Conditioning Index is positive.	Soil Conditioning Index is positive.	Soil Conditioning Index improvement – positive improvement in index for the field or planning area/unit.	<ul style="list-style-type: none"> Soil Conditioning Index Soil Quality Kit Soil testing and analysis for OM
Soil Condition - Compaction	Compressed soil particles and aggregates caused by mechanical compaction adversely affect plant-soil-moisture relationships.	Mechanically compacted soils are renovated sufficiently to restore plant root growth and/or water movement.	SAME AS NATIONAL	Non Measurable	<ul style="list-style-type: none"> Assessment of plant root systems Bulk density test-Soil Quality Kit Dial penetrometer

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Soil Condition – Contaminants: Animal Waste and Other Organics – N	Nitrogen nutrient levels from applied animal waste and other organics restrict desired use of the land.	Nitrogen nutrient application levels do not exceed soil storage/plant uptake capacities based on soil test recommendations and risk analysis results.	SAME AS NATIONAL	Pounds/Acre/Year – average annual pounds of nitrogen (N) reduced per acre for the field or planning area/unit	<ul style="list-style-type: none"> • Soil test • Leaching Index • Plant tissue test • Client application records/history Pre-sidedress Nitrogen Test (PSNAT)
Soil Condition – Contaminants: Animal Waste and Other Organics – P	Phosphorus nutrient levels from applied animal waste and other organics restrict desired use of the land.	Phosphorus nutrient application levels do not exceed soil storage/plant uptake capacities based on soil test recommendations and risk analysis results.	Phosphorus nutrient application levels do not exceed soil storage/plant uptake capacities based on soil test recommendations and risk analysis results. <i>P values do not exceed 80lbs/acre and/or the P index requirements are met.</i>	Pounds/Acre/Year – average annual pounds of phosphorus (P) reduced per acre for the field or planning area/unit	<ul style="list-style-type: none"> • Soil test • Plant tissue test • Client application records/history Phosphorus Index for the state of WV
Soil Condition – Contaminants: Commercial Fertilizer – N	Overapplication of nitrogen degrades plant health and vigor or exceeds the soil capacity to retain nutrients.	Soil nutrient levels of nitrogen do not exceed crop needs based on realistic yield goals and appropriate pH levels are maintained.	SAME AS NATIONAL	Pounds/Acre/Year – average annual pounds of nitrogen (N) reduced per acre for the field or planning area/unit	<ul style="list-style-type: none"> • Soil test • Leaching Index • Plant tissue test • Client application records/history
Soil Condition – Contaminants: Commercial Fertilizer – P	Overapplication of phosphorus degrades plant health and vigor or exceeds the soil capacity to retain nutrients.	Soil nutrient levels of phosphorus do not exceed crop needs based on realistic yield goals and appropriate pH levels are maintained.	Soil nutrient levels of phosphorus do not exceed crop needs based on realistic yield goals and appropriate pH levels are maintained. <i>P values do not exceed HIGH for the full crop rotation.</i>	Pounds/Acre/Year – average annual pounds of phosphorus (P) reduced per acre for the field or planning area/unit	<ul style="list-style-type: none"> • Soil test • Plant tissue test • Client application records/history

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Soil Condition - Contaminants - Residual Pesticides	Residual pesticides in the soil have an adverse effect on non-target plants and animals.	Pesticides are applied, stored, handled, and disposed of so that residues in the soil do not adversely affect non-target plants and animals.	SAME AS NATIONAL	Non Measurable	<ul style="list-style-type: none"> • Visual assessment • WIN-PST • Soil test • Plant and animal tissue test
Soil Condition - Damage from Soil Deposition	Sediment deposition damages or restricts land use/management or adversely affects ecological processes.	Sediment deposition is sufficiently reduced to maintain desired land use/management and ecological processes.	SAME AS NATIONAL	Acres/Year – average annual acres of sediment deposition reduced for the field or planning area/unit	<ul style="list-style-type: none"> • Visual assessment • Volume calculation • Current water erosion prediction tools (RUSLE2) coupled with sediment delivery ratios • Plant and animal community assessment